

REMARKS/ARGUMENTS

Claims 1-11 are presently pending in this application, and each of the claims stand substantively rejected. Claims 1 and 8 are presently amended, and claims 6, 7, and 11 are presently canceled. Reconsideration of the claims is respectfully requested. Claim 8 is amended to correct a claim dependency.

Objections Under 37 CFR §1.83

The drawings were objected to under 37 CFR §1.83(a) as allegedly not showing every feature of the invention specified in the claims. According to the Office Action, the coupling of the mounting joint to the ceiling and wall (claims 9 and 10) and the brake of the mounting joint (claim 11) are not shown in the drawings. Claim 11 is presently canceled.

Applicant herewith includes a proposed drawing correction as requested by the Office Action. The attached Replacement Sheet for Fig. 2 shows that the mounting joints 30 may be coupled with a wall or a ceiling. Withdrawal of this objection is respectfully requested.

Rejections Under 35 USC §102

Claims 1-8 and 11 were rejected under 35 USC §102(e) as allegedly anticipated by US Patent No. 5,855,583 to Wang et al. [Wang]. According to the Office Action, any of joints Js1 through Js4 (Fig. 3) discussed in Wang anticipate the presently claimed mounting joint for positioning and fixing the manipulator arm. This rejection is traversed in part and overcome in part as follows.

As noted in MPEP 2131, a claim is anticipated only if each and every claim element is present, either expressly or inherently, in a single reference. It is respectfully submitted that each and every element of amended claim 1 is not present in Wang.

At col. 7, lines 31-36, Wang describes the joints of Fig. 3 as follows:

FIG. 3 shows the various degrees of freedom of each articulate arm 16 and 18. The joints Js1, Js2 and Js3 correspond to the axes of movement of the base motor 34 and rotary motors 36, 38 of the robotic arm assemblies 26, respectively. The joints Js4 and Js5 correspond to the passive joints 40 and 42 of the arms 26.

Joint Js1, which presumably corresponds to and is driven by base motor 34, is described as an active joint. Wang reports that it is the base motor 34 that moves the arm relative to the base housing, at col. 5, lines 52-54.

Each robotic arm assembly 26 has a base motor 34 which moves the arm assembly 26 in a linear fashion, relative to the base housing 25, as indicated by arrows Q.

Although the arrow Q is not shown in the drawings, the intended linear motion of joint Js1 likely corresponds to the up and down movement shown in Fig. 3. Likewise, joints Js2 and Js3 correspond to rotary motors, and are also described as active joints. Wang fails to teach or suggest fixing the orientation of a mounting joint during a surgical procedure, as presently claimed.

The presently claimed invention provides significant benefits not disclosed in Wang. The mounting joint of amended claim 1 can allow an operator to situate the manipulator arm without necessarily manipulating an electronic controller or activating a base motor as discussed in Wang. What is more, the operator can pre-position the manipulator arm at a suitable position and orientation relative to the patient. By fixing the orientation of the mounting joint, the operator can carefully control motion of the wrist unit and/or surgical instrument about a desired fixed center of rotation.

For example, a surgical procedure may involve placing an instrument inside the abdomen such that the center of rotation is approximately defined by incisions in the muscles of the abdominal wall. The abdominal incisions may not provide stable reference positions or points of rotation, and so in order to maintain accurate positional control of an instrument during surgery, it may be desirable to pre-position a manipulating arm at a desired position so that during surgery the instrument will pivot around a fixed point coincident with the incision.

The Office Action of March 19, 2003, also asserts that Wang describes an instrument coupled to the distal wrist 90,91 at Fig. 7. In fact, at col. 12, lines 30-38, Wang describes a connection between an instrument and a front loading tool driver.

The quick disconnect 98 allows instruments other than the finger grasper to be coupled to front loading tool driver 84. For example, the instrument 82 may be decoupled from the quick disconnect 98 and replaced by a cutting tool, a suturing tool, a stapling tool adapted for use in this system, such as the stapling apparatus disclosed in U.S. Pat. No. 5,499,990

or 5,389,103 assigned to Karlsruhe, a cutting blade, or other surgical tools used in minimally invasive surgery.

It is respectfully submitted, therefore, that Wang fails to teach an instrument removably coupled to a distal wrist, as presently claimed. Instead, Wang describes a coupling between an instrument and a front loading tool driver.

Based on the above, Applicant submits that Wang fails to teach or suggest each of the elements of amended claim 1, and therefore the claim is allowable. Claims 2-5 and 8 are similarly allowable as depending from an allowable base claim, as well as for the novel combination of elements they recite. Withdrawal of this rejection is respectfully requested.

Rejections Under 35 USC §103

Claims 9 and 10 were rejected under 35 USC §103(a) as allegedly unpatentable over Wang in view of US Patent No. 5,807,377 to Madhani et al. [Madhani]. This rejection is overcome in part and traversed in part as follows.

According to MPEP 2143, a *prima facie* case of obviousness requires, inter alia, that the combination of cited references must teach or suggest all the claim limitations. Applicant respectfully submits that the combination of Wang and Madhani fail to teach or suggest all of the claim limitations. As noted above, Wang fails to teach or suggest an instrument removably coupled to a distal wrist. Madhani fails to remedy this deficiency of Wang. Because the combination of Wang and Madhani fail to teach each and every element of amended claim 1, it is submitted that the claim is allowable, and therefore claims 9 and 10 are similarly allowable as depending from an allowable base claim, as well as for the novel combination of elements they recite. Withdrawal of this rejection is respectfully requested.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

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PATENT

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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